

NOTES ON THE GENUS GAESISCHIA MICHENER, LaBERGE
AND MOURE, WITH DESCRIPTIONS OF A NEW SPECIES
AND SUBGENUS FROM MÉXICO

(Hymenoptera:Apoidea)

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The eucerine genus *Gaesischia* previously included a large number of South American species arranged in three subgenera (Moure and Michener, 1955) and one species placed in a fourth subgenus (*G. exul* Michener, LaBerge and Moure) from Arizona, México and Guatemala. Recently, the author discovered in a collection of eucerine bees sent to him for study by the California Insect Survey, University of California, the previously unknown female of *G. exul* together with a new species from México representing an undescribed subgenus. These specimens are described below.

The new subgenus described below is as closely related to the genus *Dasyhalonia* Michener, LaBerge and Moure as it is to the genus *Gaesischia*. It seems necessary, therefore, to group the three subgenera of *Dasyhalonia*, as described by Moure and Michener (1955), together with the subgenera of *Gaesischia* and the new subgenus described below into one genus—*Gaesischia*. This is done below following the descriptive section and a table summarizing the most significant characters of the eight subgenera is included. The position of the new subgenus between the four previously known subgenera of *Gaesischia* and the three subgenera previously grouped in the genus *Dasyhalonia* is clearly shown in this table. In the description given below of the female of *Gaesischia exul* characters of subgeneric or generic value are italicized.

The female of *Gaesischia* does not appear in my key to the eucerine genera of North and Central America (LaBerge, 1957). The female of *G. (Gaesischiana) exul* can be readily separated from other North American eucerine genera by the short broad hind tibiae which are equal in length to no more than the first seven flagellar segments together. The subgenus *Prodasyhalonia*, which is described below, can be readily separated from other North American eucerines by the presence of a strong inner apical spine on the anterior coxa. This spine is at least half the length of the trochanter.

Table I.—Diagnostic characteristics of the subgenera of *Gaesischia*

<i>Gaesischia</i>	<i>Gaesischiopsis</i>	<i>Agaesischia</i>	<i>Gaesischiana</i>
1. Head elevated behind ocelli.	Head elevated.	Head elevated.	Head elevated.
2. Maxillary palpus 5- or 6-segmented.	4-segmented.	5-segmented.	5-segmented.
3. Clypeus close to eye.	Close to eye.	Close to eye.	Close to eye.
4. Jugal lobe of hind wing slightly shorter than cubital cell.	Slightly shorter than cubital cell.	Slightly longer than (or sub-equal to) cubital cell.	Slightly shorter than cubital cell.
5. Female subapical flagellar segments longer than or sub-equal to width.	Longer than or subequal to width.	Longer than or subequal to width.	Longer than or subequal to width.
6. Female anterior coxal spine half length of trochanter.	Spine reaching apex of trochanter.	Spine absent.	Spine absent.
7. Female scopal hairs plumose.	Scopae plumose.	Scopae plumose.	Scopal hairs simple.
8. Male penultimate flagellar segment more than twice as long as broad.	More than twice as long as broad.	More than twice as long as broad.	More than twice as long as broad.
9. Male ultimate flagellar segment slightly compressed.	Not at all compressed.	Markedly compressed.	Markedly compressed.
10. Male fourth and fifth sterna without long bristlelike hairs.	Fifth sternum with subapical row of long, bristlelike, coarse, uncurled hairs.	Without long bristlelike hairs.	Without long bristlelike hairs.
11. Male sixth sternum with pair of carinae converging posteriorly.	With pair of carinae converging posteriorly.	With pair of carinae converging posteriorly.	With pair of carinae converging posteriorly.

Table I.—Diagnostic characteristics of the subgenera of *Gaesischia*—(Continued)

<i>Prodasyhalonia</i>	<i>Dasyhalonia</i>	<i>Zonalonia</i>	<i>Pachyhalonia</i>
1. Head slightly elevated.	Head not elevated.	Head not elevated.	Head not elevated.
2. 5-segmented.	5- or 6-segmented.	6-segmented.	6-segmented.
3. Clypeus close to eye.	Close to eye.	Separated from eye by one-third minimum flagellar diameter.	Separated from eye by one-third minimum flagellar diameter.
4. Slightly shorter than cubital cell.	Slightly shorter than cubital cell.	Slightly shorter than cubital cell.	Slightly shorter than cubital cell.
5. Longer than or subequal to width.	Subapical flagellar segments of female broader than long.	Broader than long.	All flagellar segments of female longer than broad.
6. Spine longer than half length of trochanter	Spine absent.	Spine absent.	Spine absent.
7. Scopae plumose.	Scopae plumose.	Scopae plumose.	Scopal hairs serrate but not branched.
8. More than twice as long as broad.	Penultimate flagellar segment of male less than twice as long as broad.	Less than twice as long as broad.	Less than twice as long as broad.
9. Markedly compressed.	Not at all compressed, tapering.	Slightly compressed, tapering.	Markedly compressed, tapering.
10. Male fourth and fifth sterna (often third) with very long, coarse, curled, subapical, bristlelike hairs.	With very long, coarse, curled, subapical, bristlelike hairs.	With very long, coarse, curled, subapical, bristlelike hairs.	With very long, coarse, curled, subapical, bristlelike hairs.
11. Male sixth sternum with strong median lamella ending in posteriorly directed tooth.	With weakly elevated mediobasal area bearing hair tuft.	With strongly elevated mediobasal area.	With strongly elevated mediobasal area sometimes ending in tooth.

GAESISCHIA (GAESISCHIANA) EXUL Michener, LaBerge and Moure.

Gaesischia exul Michener, LaBerge and Moure, 1955, *Dusenian*, 6:224–226; LaBerge, 1957, *Amer. Mus.*, no. 1837:34.

Female.—Measurements: Length about 12 mm.; width about 3.5 mm.; wing length (including tegula) about 9 mm. *Color*: Integument black except as follows: labrum, base of mandible and *subapical half of clypeus yellow*; flagellar segments 3 to 10 and apical half of mandible refuescent; legs except coxae yellow to red; tegulae testaceous; wing membranes hyaline, veins dark brownish black; metasomal terga with apices broadly hyaline, yellow; sterna reddish yellow. *Structure and sculpture*: First flagellar segment shorter than second and third together, third equals about seven-eighths of first, segments 3 to 9 subequal, last segment subequal to first. Maxillary palpal segments in ratio of about 2:3:3:1:1; distal part of galeae subequal in length to eye. *Clypeus protruding beyond eye by about half width of eye in profile, protruding surface flat and sharply declivous posteriorly with well-defined carina between flattened and declivous areas*. Galeae shiny above, with extremely delicate reticular shagreening; clypeus coarsely punctate, surface scarcely dulled by delicate cross-striations. Mesoscutum with large shallow punctures separated by half a puncture width, surface (and bottoms of punctures) dulled by extremely fine tessellation especially on anterior half; scutellum and mesepisternum with smaller, deeper, less crowded punctures and surfaces shiny, delicately shagreened; propodeum with dorsal surface subequal to metanotum in length, coarsely punctate with surface delicately shagreened, moderately shiny. *Hind wing with jugal lobe slightly shorter than cubital cell. Anterior coxa without inner apical spine; hind tibia less than four times as long as broad and equal in length to first seven flagellar segments or less*; tibial spurs normal. Metasomal tergum 1 with punctures in basal half separated basally by one or two puncture widths and sparser toward middle of tergum, impunctate apically; terga 2 and 3 with minute round punctures separated mostly by one puncture width in median half and by two puncture widths in apical hyaline area; *tergum 6 with gradulus without lateral parts*; pygidial plate V-shaped, pointed at apex. *Hair*: Head ochraceous, brighter on vertex. Thorax white on lower lateral surfaces to bright ochraceous above. Metasomal tergum 1 with long ochraceous hairs basally, scattered, short, appressed, yellow hairs apically; *terga 2 to 4 with diffuse, short, closely appressed, pale ochraceous pubescence*; terga 5 and 6 with long, pale ochraceous to yellow hairs; sternal hairs yellow medially to pale ochraceous laterally. Legs pale ochraceous except as follows: distitarsi, fore basitarsi, inner surfaces of tibiae and middle and hind basitarsi yellow; basitibial plates covered with yellowish brown hairs; *scopal hairs simple, short, white*.

Distribution.—Southern Arizona, México and Guatemala. The female described above was collected by R. C. Bechtel and E. I. Schlinger on an expedition sponsored by the Associates in Tropical Biogeography, University of California at DONAJI, OAXACA,

MEXICO on April 17, 1953, and is in the collection of the California Insect Survey, University of California at Berkeley.

Prodasyhalonia LaBerge, new subgenus

Type Species—*Gaesischia mexicana* LaBerge, new species.

Female.—Clypeus with extremely narrow subapical yellow band; maxillary palpus five-segmented. Jugal lobe of hind wing slightly shorter than cubital cell; anterior coxa with inner apical spine more than half length of trochanter; hind tibia more than four times as long as broad, equal in length to about first nine flagellar segments together; tibial spurs normal; scopal hairs plumose. Second tergum with basal and subapical bands of appressed, pale, plumose pubescence; tergum 6 with gradulus with short cariniform lateral parts. See Table I for additional characters.

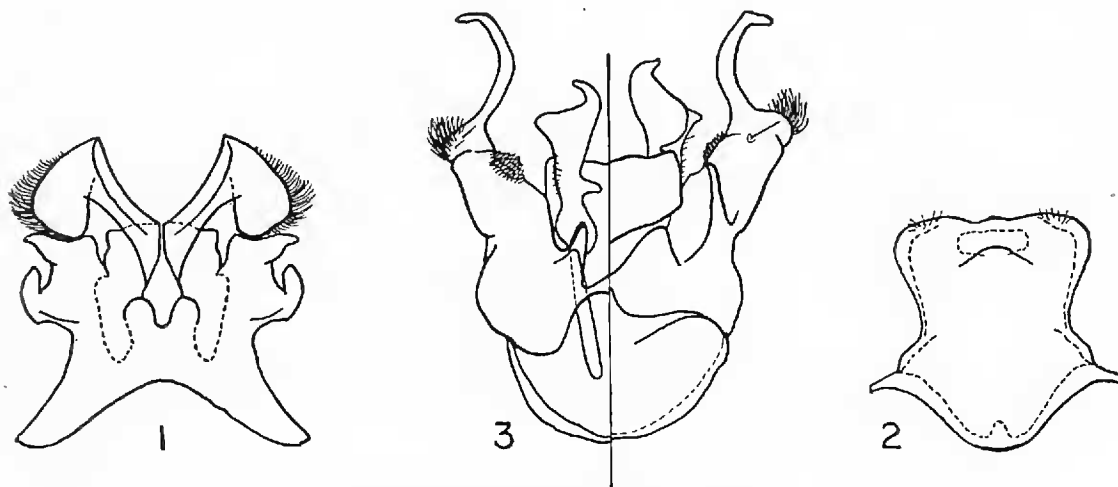
Male.—Maxillary palpus five-segmented; flagellum with segments 4 to 10 subequal in length, last segment much compressed, less than three times as long as broad, penultimate segment normal. Jugal lobe of hind wing slightly shorter than cubital cell; hind basitarsus much flattened; middle tibial spur slightly shorter than from its base to anterior tibiofemoral articulation; anterior coxa without apical spine; second tergum with basal and subapical pale pubescent bands; sternum 5 with very long, apically curled, subapical, coarse, bristlelike hairs; sternum 6 with strong median longitudinal lamella ending posteriorly in a pointed apex; sternum 7 with expanded median plates and lateral plates deeply emarginate laterally. See Table I for additional characters.

Gaesischia (Prodasyhalonia) mexicana LaBerge, new species

Female.—Measurements: Length about 10 mm.; width about 3 mm.; wing length (including tegula) about 7.5 mm. *Color*: Integument black except as follows: clypeus with extremely narrow subapical yellow band; tegulae testaceous posteromedially; wing membranes somewhat infumate, yellow; metasomal terga 1 to 4 narrowly hyaline; apical half of mandible and distitarsi rufescent. *Structure and sculpture*: Flagellum as in *exul* but third segment equals about three-fourths first segment and last segment slightly shorter than first. Maxillary palpal segments in ratio of about 14:14:8:5:6; distal part of galeae slightly shorter than eye. Clypeus protruding beyond eye by less than half width of eye, surface rounded, without sub-basal carina. Galeae dulled above by dense regular tessellation; clypeus with coarse, round, shallow punctures, surface dulled by sparse cross-striations. Mesoscutum with large round punctures separated by half to one puncture width, surface shiny; scutellum similar but punctures more crowded; mesepisternum similar but punctures crowded and slightly shallower; propodeum with dorsal surface subequal in length to metanotum, with distinct round punctures, surface dulled by fine tessellation, posterior surface (except shiny upper triangle) and lateral surfaces coarsely punctate and finely tessellate. Metasomal tergum 1 punctate over about basal eight-ninths, punctures in median area of basal fourth separated by two to four puncture widths, apical to middle separated by half a puncture width or less; terga 2 and 3 as in *exul* but punctures more crowded in apical areas; pygidial

plate V-shaped with rounded apex. *Hair*: Head white except abundant dark brown vertex. Mesoscutum and scutellum with short dark brown hairs except white peripherally; thorax otherwise white. Metasomal tergum 1 with long white hairs in basal half, with short, simple, appressed, dark brown hairs in apical half; tergum 2 with basal and apical bands of white pubescence separated by band of dark brown, appressed, relatively sparse and simple hairs, apical pale band broadly interrupted medially; tergum 3 similar to 2 but interband zone with sparse pale pubescence and apical pale band uninterrupted; terga 4 and 5 covered with diffuse pale pubescence and long brown bristlelike hairs; tergum 6 dark brown; sternal hairs brown medially to white laterally. Legs white except as follows: inner surfaces of basitarsi dark reddish brown; inner surfaces of hind tibiae yellow; outer surfaces of fore and middle tibiae near apices and surrounding basitibial plates pale brown.

Male.—Measurements: Length about 9 mm.; width about 2.5 mm.; wing length (including tegula) about 7 mm. *Color*: Integument black except as follows: clypeus yellow except extreme basal margin and apical margin; flagellar segments 1 to 8 and base of 9 red below, dark brown above; eyes gray; wing membranes slightly infumate, yellow; tarsi and tibiae dark red; terga 1 to 5 with narrow apical margin hyaline, yellow. *Structure and sculpture*: Minimum length of first flagellar segment equals about one-sixth of maximum length of second; maxillary palpal segments as in female but third segment longest; sculpturing as in female. Thoracic sculpturing as in female. Metasomal sculpturing as in female but terga 3, 4 and 5 similar to tergum 2; sternum 7 with expanded median plate directed laterally with short dorsal and ventral subapical, blunt tubercles. Gonostylus strongly curved with apex directed ventrolaterally, with long stout hairs at base on ventrolateral surface; spicules at apex of gonocoxite short and blunt; apicodorsal process of gonocoxite short, thin, subapical (Figs. 1 to 3). *Hair*: As in female except as follows: mesoscutum and scutellum with less



EXPLANATION OF FIGURES

Figs 1-3—Terminalia of *Gaesischia mexicana*, approximately $\times 25$. 1) Sternum 7, ventral view. 2) Sternum 8, ventral view. 3) Genital capsule, dorsal view at right, ventral view at left.

brown hairs; tergum 2 with apical pale pubescent band reduced to short lateral fasciae each equal to less than one-fourth of width of tergum; tergum 3 like tergum 2 but apical pale band not so broadly interrupted medially; tergum 4 like tergum 3 of female; terga 5, 6 and 7 with ochraceous hairs and pubescence. Legs white to pale ochraceous except inner surfaces of tarsi and tibiae yellow to red.

Type Material.¹—Female holotype, male allotype, and one female and one male paratype from 4 MILES WEST OF EL JOCOTE, CHIAPAS, MEXICO, were collected on March 4, 1953, by R. C. Bechtel and E. I. Schlinger. In addition, one female and two male paratypes from Chiapas, México, are as follows: one male from 4 miles southeast of Soyalo, February 28, 1953, R. C. Bechtel and E. I. Schlinger; one male from 4 miles northwest of Ocosingo, March 9, 1953, Ray F. Smith; one female from 9 miles south of Ixtapa, March 1, 1953, R. C. Bechtel and E. I. Schlinger. The holotype and allotype are in the collection of the University of California at Berkeley. The paratypes are in the collection of the University of California and in the Snow Entomological Collection, the University of Kansas, Lawrence.

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BOOK NOTICES

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¹ This material was collected in the course of an expedition sponsored by the Associates in Tropical Biogeography, University of California.